

REVIEW OF REPLACEMENT SCHEDULES FOR INFORMATION TECHNOLOGY EQUIPMENT

AN ISSUE BRIEF FROM LEGISLATIVE BUDGET BOARD STAFF

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OBJECTIVE

Agency information technology replacement schedules for PCs, laptops and other technology reflect both the business needs and budget parameters of a state agency or institution.

KEY FACTS

- ◆ State agencies have approximately 415,400 desktops and 123,000 laptops. These PCs are either owned or leased.
- ◆ IT replacement schedules should be customized to the business and budgetary needs of an agency.

STATUTORY REFERENCES

None. However, the Texas Department of Information Resources publishes guidelines on their website.

Replacement schedules for information technology (IT) equipment should take into account many factors. Agencies should consider replacement schedules that align with their business needs and budget. The purpose of this brief is to provide the legislature and agencies with factors to consider when establishing a PC, laptop, and technology replacement schedule.

INFORMATION TECHNOLOGY HARDWARE AND DEFINITIONS

Life cycle: The period of time during which information technology hardware and software remains useful to the state.

Replacement schedule: The planned rate of replacement for information technology hardware and software.

This brief examines replacement schedules for personal computers (PC), laptops, notebooks, tablets, and servers. Agencies should identify the standard configurations for PCs, laptops, notebook, and tablets. The term “server” can describe a wide range of computing devices from low end (print and file servers) to high end (enterprise servers and mainframes).

BASIC TASKS

There are many lifecycle methodologies, but most share four major elements: hardware inventory and assessment, procurement and deployment, ongoing management, and replacement and disposal.

RISKS, OPPORTUNITIES AND FACTORS TO CONSIDER

Agencies should compare the cost of maintaining existing equipment to the cost of purchasing new equipment. Between operations and finance, agencies can get rid of technology too soon or too late. Finance and maintenance drive lifecycles. Agencies must perform their own maintenance after warranties have expired. Manufacturers use maintenance as an incentive to drive the customer to replace current inventory. There are hidden costs associated with keeping PCs older than 4 to 4.5 years:

- They cost 59 percent more to support.
- They take up to 50 percent longer to perform some tasks. Today’s desktops have two times the performance of a three-year-old desktop.
- There are 53 percent more security breaches.
- Older PCs use 50 percent more energy.
- Older PCs are seldom under warranty. Most companies purchase a three-year extended warranty. Recent studies estimate the failure rate in year four is about 24 percent, twice the rate in year one.

ASSET DISPOSITION

According to Gartner, Inc. (an information technology research and advisory company), some vendors offer asset disposition. Agencies may consider this when refreshing their hardware. Asset disposition allows the agency to get a check from the vendor for their inventory.

REVIEW OF REPLACEMENT GUIDELINES

The Texas Department of Information Resources (DIR); Gartner, Inc. (Gartner); and other states provide their own guidelines regarding IT equipment replacement. DIR recommends a four-year lifecycle for state-owned PCs and laptops. They recommend a three-to-four-year lifecycle for leasing and seat management. About one-third of all desktops in state agencies are leased. DIR does not publish any guidelines regarding notebooks, tablets and servers.

According to DIR, there are no absolute life cycle numbers. Gartner's suggested standard may not be a good fit for all state agencies. A formal process to identify weaknesses in PC management procedures, develop user profiles for equipment, and consider technological advances must take place to develop a PC life cycle best suited to the needs of a particular agency. PC acquisition will require ongoing expenditures, but establishing a needs-based plan for managing the expenditures will assist in stabilizing PC costs. Agency enterprise strategies should include plans for PC upgrades and replacements based on end-of-cycle issues rather than new or emerging (bleeding-edge) technologies.

**FIG. 1
REPLACEMENT CYCLE**

SOURCE	DESKTOPS (YEARS)	LAPTOPS (YEARS)
Texas Department of Information Resources	4.0	3.0
Gartner, Inc. (Industry Standard)	4.6	3.7
Other States (Avg.)	4.4	4.3

SOURCE: Texas Department of Information Resources; Gartner, Inc.

According to Gartner, the industry standard has leveled off to 4.6 years for desktops and 3.7 years for laptops. Optimum PC replacement decisions are based on the operating system (OS) and on functional compatibility, usually four years. Five-year refreshment cycles are recommended only for fixed-function task worker systems. Vendors should consider accelerating replacement cycles for power users, such as application developers, graphics designers, and large spreadsheet users, but only if faster performance and newer features provide a clearly evident return on investment. Laptops should be replaced more frequently due to their mobility and chance of being damaged. Although notebooks are significantly more reliable than just five years ago, they still suffer a high enough failure rate to be replaced at the end of the original equipment manufacturer warranty period, which is three years. Under a bring-your-own-device (BYOD) approach, phones and tablets usually have a two-year replacement cycle. BYOD tools have a shorter life and tend to become damaged. Gartner does not publish a replacement cycle for servers. Servers are driven by support and maintenance.

Various states have adopted PC life cycles. A few examples are:

- **Michigan:** A four-year life cycle for PCs. They recommend four years as the reasonable upper limit for the life of a deployed server due to vendors committing to four years of parts availability for servers.
- **Oregon:** looks at PCs at the end of their three year warranty. Their current practice is to review equipment at the end of the standard warranty period, taking into account helpdesk calls and technical staff expertise. The evaluation is presented to the individual Division Director and at that time, they will determine, based on the evaluation that is presented and budget constraints which machines, if any will be replaced. On average, network servers and infrastructure equipment are replaced every five years.
- **Montana:** Agencies are encouraged to compare the cost of supporting hardware and software older than five years to the cost of purchasing new hardware and software. The purchase cost is generally less than the support costs for older hardware and software.

USEFUL REFERENCES

Department of Information Resources: PC Life Cycles, Guidelines for Establishing Life Cycles for Personal Computers
<http://www.dir.texas.gov/>

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